eStruxture Data Centers

A Vertiv Case Study

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About the Company

As a pan-Canadian carrier- and cloud-neutral provider of data center solutions, eStruxture Data Centers is on a mission to meet the high-density, hyperscale demands of modern enterprise applications.

Offering power densities of 30 kW a rack as standard, with more available upon request, the company provides customizable colocation and connectivity services to business across a variety of verticals.

With ample space and capacity across Canada, eStruxture is well positioned to meet the diverse needs of customers looking for retail colocation solutions or wholesale data center deployments. Its data centers are highly connected with access to all major carriers, dark fiber providers, public and private cloud providers, Internet exchanges (IXs), and more than 900 companies.

www.estruxture.com

Background

At the time of eStruxture's founding in April 2017, the company realized that its customers lacked choice when it came to cloud- and carrier-neutral colocation and connectivity solutions. The company founder, Todd Coleman, who also serves as president and chief executive officer, spent many years in the telecom industry and realized that the existing carriers and smaller providers either lacked a pan-Canadian presence or the capital to invest in meeting customers' growing and evolving requirements.

The North American data center space is heavily influenced by the accelerated growth of edge and cloud computing, as well as data-intensive workloads from companies leveraging artificial intelligence (AI), machine learning, and Internet of Things (IoT) functionality. These trends lead to increased demand for the build out of new data centers and ultra-high-density deployments.

"We saw an opportunity to get involved in the landscape and provide customers with more choice," Coleman said. "By establishing facilities on both coasts, and in both downtown and suburban locations, we knew we would be uniquely positioned to support customers' shifting workloads and their moves into new markets."

Specifically, the eStruxture team sought a partner to help build out its MTL-2 colocation facility with highly resilient electrical and mechanical infrastructure in a phased, modular approach. This and subsequent builds enable eStruxture to provide its customers with more locations, connections and capacity..

Case Summary

Location: MTL-2 data center in Montreal, Canada

Vertiv Solutions:

- Liebert® EXL S1 UPS units with lithium-ion batteries (LIB) installed in parallel 2+1
- Liebert® DSE free-cooling economization system with Liebert® iCOM™ controls
- Liebert® PPC power conditioning and distribution cabinet with branch monitoring
- Liebert® RX distribution cabinet with branch monitoring
- Vertiv™ VR racks with Vertiv Geist™ rack power distribution units (rPDUs)

Results:

- Optimized use of computing space allows for additional customer offerings such as dedicated halls with office space, storage, and disaster recovery options
- Ability to support customers with high-density requirements by offering up to double the capacity of most competitors with 30 kW per rack standard
- New facility ready for turnover six months earlier than previous builds

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> "Working with Vertiv™ helped us achieve all our goals and enabled us to deploy capital expenditures in a phased fashion that is in line with our revenue growth. By not having to over-build from the outset, we have great flexibility and agility in expanding alongside our customers, which is a central component of our growth model."
>
> **— Todd Coleman, President and CEO, eStruxture**

Solution

eStruxture sees the future of its industry being largely focused on establishing more data center locations. Its customers are building hybrid environments that mix colocation, managed services, and public cloud architectures. To support these options and give customers choice in designing the infrastructure they need, eStruxture focused on modularity, allowing the company to evolve alongside its customers.

One of the biggest challenges the company faced was dealing with the enormity of design options influenced by differing customer requirements. Knowing that a one-size-meets-all approach was not what they wanted to offer, they engaged Vertiv to help design and build its 187,000 square foot MTL-2 facility. And while the planned capacity is 30 mega-watts (MW) in support of high-density power needs, the eStruxture team wanted to ensure operations were as sustainable as possible.

Choosing equipment that allowed eStruxture to gain efficiencies while minimizing environmental impact was a key consideration throughout the design, deployment, and integration processes. The MTL-2 facility utilizes the Liebert EXL S1 uninterruptible power supply (UPS), which is designed for maximum efficiency and power density, and combines it with the Liebert PPC power conditioning and distribution cabinet. Not only does the UPS feature industry-leading power per square foot, it offers electrical protection and intelligent paralleling that optimizes performance at partial loads.

eStruxture's pursuit of optimal sustainability is also supported by its use of the Liebert DSE thermal management system. This pumped refrigerant economization system with a fail-safe direct expansion backup allows the company to utilize free cooling for much of the year.

The Liebert DSE is 75 percent more efficient than direct expansion systems alone and its advanced controls have multiunit team modes that eliminate the inefficiencies of unit fighting. These Liebert iCOM controls also have an optimization feature that ensures automatic and smooth transition to economization for even greater gains in efficiency.

"As a water-free solution, the Liebert DSE perfectly aligned with our goals," Coleman said. "It helps us keep our commitment to operate as sustainably as possible. Plus, the modular, scalable design allows us to add capacity without the need for additional chillers, cooling towers or ductwork. Ultimately, the Liebert DSE system allows us to keep costs competitive."

Controlling colocation costs also means making the most of available space and enabling intelligent power management, which eStruxture accomplished with the Liebert RX distribution cabinet and Vertiv Geist rPDUs within Vertiv VR racks. With space always at a premium, the Liebert RX supplies packaged power distribution in the smallest possible footprint and offers the flexibility needed by eStructure to add additional circuits when meeting changing room demands. Its liquid crystal display (LCD) also provides easy access to true root mean square (RMS) measurements and battery backed memory. When added to the monitoring capabilities of its various rPDUs, eStruxture can easily analyze power usage data and adjust operations to meet customers' service level agreements. Using only Vertiv solutions has allowed eStruxture to standardize their deployments and bring equipment online faster.

"When it came to choosing specific Vertiv technologies, we assessed their reliability, energy efficiency, and time to deploy," Coleman said. "As a data center provider with a reputation for providing a la carte solutions, it was absolutely critical that we could produce customer resources when they needed them."

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